

Great Western Operating Company, LLC

Location

Field

Installation

Colorado

Wattenburg

Schneider North

Slot

Well

Wellbore

Slot 01 - Schneider HD 11-019HNX

Schneider HD 11-019HNX

Schneider HD 11-019HNX (AWB)

Created by mmount

Date plotted 18-Sep-2019

Plot reference is Schneider HD 11-019HNX (AWB).

Ref wellpath is Schneider HD 11-019HNX (AWPH1).

Coordinates are in Feet reference Slot 01 - Schneider HD 11-019HNX.

True Vertical Depths are reference Rig Datum.

Measured Depths are reference Rig Datum.

Rig Datum: Actual Datum #1

Rig Datum to Mean Sea Level: 4755.00 ft.

Plot North is aligned to TRUE North.

Scale 1 cm = 400 ft

East (Feet) ->

May-14-2018
EIMM-2015.Dwg: 687.7 deg Field: 52300.9 nT
Lat: N40 19 27.876 Long: W 104 40 34.384 Elev: 4735.00 ft
Magnetic North is 9.35 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.35 deg

<- True Vertical Depth (Feet)

Scale 1 cm = 800 ft

<- North(Feet)

Scale 1 cm = 400 ft

Scale 1 cm = 800 ft

Vertical Section (Feet) ->

Azimuth 287.65 with reference 0.00 N, 0.00 E from Slot 01 - Schneider HD 11-019HNX

Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Schneider HD 11-019HNX
MDs and TVDs are from Rig Floor 4755.0ft above Mean Sea Level

Wellbore Information

Date Created	Date Revised	API #	RKB above GL	Well Name
Aug-29-2019	Sep-18-2019	05-123-46413	20.00	Schneider HD 11-019HNX

Slot Coordinates

Latitude	Longitude
40.32400200	-104.82689100

Pad Information

Pad Name	Ground Elev.
Schneider North	4735.00

Field

Name
Wattenburg

Wellpath Report

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
0.00	0.00	0.00	0.00	0.00	0.00		0.00	40.32400200	-104.82689100
14.00	0.00	258.58	14.00	0.00	0.00	0.00	0.00	40.32400200	-104.82689100
96.00	0.35	258.58	96.00	-0.05	-0.25	0.43	0.22	40.32400186	-104.82689188
185.00	0.79	281.34	184.99	0.02	-1.11	0.55	1.07	40.32400205	-104.82689499
273.00	1.36	320.54	272.98	0.94	-2.37	1.02	2.55	40.32400459	-104.82689951
365.00	1.41	342.16	364.95	2.86	-3.41	0.57	4.12	40.32400986	-104.82690324
455.00	2.11	323.09	454.91	5.24	-4.75	1.00	6.11	40.32401639	-104.82690802
545.00	2.46	325.99	544.84	8.17	-6.82	0.41	8.98	40.32402442	-104.82691547
635.00	1.41	312.28	634.79	10.51	-8.72	1.27	11.50	40.32403086	-104.82692228
725.00	0.40	322.65	724.78	11.51	-9.73	1.13	12.76	40.32403359	-104.82692590
815.00	0.62	15.47	814.77	12.23	-9.79	0.55	13.04	40.32403556	-104.82692612
905.00	0.79	345.32	904.77	13.30	-9.82	0.45	13.39	40.32403850	-104.82692622
995.00	1.76	341.72	994.74	15.21	-10.41	1.08	14.53	40.32404375	-104.82692834
1085.00	4.04	352.71	1084.62	19.67	-11.25	2.60	16.68	40.32405599	-104.82693133
1175.00	7.12	352.62	1174.18	28.35	-12.37	3.42	20.38	40.32407981	-104.82693535
1265.00	10.55	347.43	1263.10	41.92	-14.88	3.91	26.89	40.32411708	-104.82694435
1355.00	14.33	347.35	1350.98	60.84	-19.11	4.20	36.66	40.32416900	-104.82695953
1445.00	15.91	347.08	1437.86	83.73	-24.31	1.76	48.55	40.32423184	-104.82697818
1528.00	18.11	348.58	1517.22	107.47	-29.41	2.70	60.61	40.32429699	-104.82699646
1577.00	18.58	350.52	1563.73	122.63	-32.20	1.57	67.87	40.32433862	-104.82700648
1620.00	19.07	352.36	1604.43	136.35	-34.26	1.79	73.99	40.32437628	-104.82701388
1710.00	19.78	352.37	1689.31	166.02	-38.24	0.79	86.78	40.32445771	-104.82702814
1799.00	19.97	342.88	1773.03	195.48	-44.71	3.63	101.88	40.32453857	-104.82705136
1889.00	19.01	344.00	1857.87	224.25	-53.28	1.14	118.76	40.32461757	-104.82708208
1978.00	19.53	347.28	1941.89	252.70	-60.55	1.35	134.32	40.32469565	-104.82710816
2068.00	20.37	345.16	2026.49	282.52	-67.87	1.23	150.34	40.32477749	-104.82713443
2157.00	23.08	348.00	2109.16	314.56	-75.47	3.27	167.29	40.32486545	-104.82716167
2246.00	25.50	355.95	2190.30	350.75	-80.45	4.57	183.01	40.32496478	-104.82717954
2336.00	28.64	357.20	2270.43	391.63	-82.88	3.55	197.71	40.32507699	-104.82718822
2425.00	31.66	352.74	2347.39	436.12	-86.87	4.22	215.01	40.32519911	-104.82720255
2515.00	33.69	346.85	2423.16	483.87	-95.54	4.19	237.75	40.32533019	-104.82723364
2605.00	34.61	346.98	2497.64	533.08	-106.97	1.03	263.57	40.32546527	-104.82727466
2694.00	34.54	346.91	2570.92	582.28	-118.38	0.09	289.36	40.32560033	-104.82731557
2784.00	34.65	347.27	2645.01	632.09	-129.80	0.26	315.34	40.32573704	-104.82735652
2873.00	34.69	346.83	2718.21	681.43	-141.14	0.28	341.11	40.32587248	-104.82739721
2963.00	33.69	347.16	2792.65	730.71	-152.53	1.13	366.90	40.32600774	-104.82743803
3052.00	34.06	347.18	2866.55	779.07	-163.54	0.42	392.06	40.32614051	-104.82747754
3142.00	34.03	347.22	2941.12	828.21	-174.71	0.04	417.59	40.32627537	-104.82751758
3231.00	34.27	347.41	3014.77	876.95	-185.68	0.30	442.83	40.32640917	-104.82755693
3321.00	33.64	349.55	3089.43	926.20	-195.72	1.50	467.33	40.32654435	-104.82759295
3410.00	34.63	349.21	3163.09	975.28	-204.93	1.13	490.98	40.32667908	-104.82762597
3500.00	33.90	346.04	3237.48	1024.76	-215.77	2.14	516.32	40.32681491	-104.82766486
3589.00	34.45	346.77	3311.11	1073.36	-227.52	0.77	542.25	40.32694829	-104.82770700
3679.00	34.52	347.04	3385.30	1122.99	-239.07	0.19	568.30	40.32708453	-104.82774841
3768.00	34.38	347.62	3458.69	1172.11	-250.11	0.40	593.71	40.32721936	-104.82778802
3858.00	34.48	347.01	3532.92	1221.75	-261.28	0.40	619.41	40.32735562	-104.82782810
3947.00	34.52	346.83	3606.27	1270.85	-272.69	0.12	645.17	40.32749041	-104.82786902
4036.00	34.64	345.65	3679.55	1319.91	-284.71	0.76	671.50	40.32762507	-104.82791211
4126.00	34.49	345.91	3753.66	1369.41	-297.25	0.23	698.46	40.32776094	-104.82795710
4215.00	34.53	346.42	3827.00	1418.37	-309.31	0.33	724.79	40.32789533	-104.82800034
4305.00	34.59	346.77	3901.12	1468.03	-321.14	0.23	751.13	40.32803165	-104.82804280
4394.00	34.46	347.11	3974.44	1517.17	-332.54	0.26	776.89	40.32816653	-104.82808368
4484.00	34.32	346.95	4048.71	1566.71	-343.95	0.19	802.78	40.32830250	-104.82812460
4573.00	34.02	346.22	4122.35	1615.33	-355.55	0.57	828.57	40.32843597	-104.82816619
4663.00	33.96	348.45	4196.97	1664.41	-366.58	1.39	853.97	40.32857069	-104.82820576
4752.00	34.08	348.64	4270.74	1713.21	-376.46	0.18	878.19	40.32870465	-104.82824123
4842.00	34.69	348.21	4345.01	1763.01	-386.66	0.73	903.00	40.32884133	-104.82827781
4931.00	34.94	348.48	4418.08	1812.77	-396.93	0.33	927.87	40.32897793	-104.82831463
5021.00	33.37	349.66	4492.56	1862.38	-406.52	1.89	952.05	40.32911410	-104.82834903
5111.00	34.09	350.58	4567.41	1911.61	-415.09	0.98	975.15	40.32924924	-104.82837978
5200.00	34.27	348.79	4641.04	1960.80	-424.04	1.15	998.59	40.32938425	-104.82841189
5290.00	34.67	346.23	4715.24	2010.52	-435.06	1.67	1024.17	40.32952073	-104.82845142
5380.00	34.57	346.82	4789.30	2060.24	-446.98	0.39	1050.60	40.32965722	-104.82849416
5469.00	34.12	347.24	4862.79	2109.17	-458.25	0.57	1076.17	40.32979153	-104.82853458
5559.00	33.42	346.87	4937.60	2157.93	-469.46	0.81	1101.64	40.32992536	-104.82857478
5648.00	34.09	346.91	5011.60	2206.09	-480.67	0.75	1126.93	40.33005756	-104.82861501
5738.00	34.13	346.19	5086.11	2255.18	-492.41	0.45	1153.00	40.33019230	-104.82865712
5827.00	34.77	345.51	5159.50	2303.99	-504.72	0.84	1179.53	40.33032630	-104.82870127

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
5917.00	34.15	347.86	5233.71	2353.54	-516.46	1.63	1205.73	40.33046230	-104.82874337
6006.00	33.95	347.13	5307.46	2402.19	-527.24	0.51	1230.76	40.33059584	-104.82878207
6096.00	34.20	347.47	5382.00	2451.38	-538.33	0.35	1256.24	40.33073086	-104.82882183
6185.00	34.87	346.32	5455.32	2500.52	-549.77	1.05	1282.04	40.33086574	-104.82886288
6274.00	34.92	348.02	5528.32	2550.16	-561.08	1.09	1307.87	40.33100200	-104.82890343
6364.00	35.58	349.76	5601.82	2601.12	-571.08	1.34	1332.85	40.33114189	-104.82893931
6453.00	34.01	346.43	5674.91	2650.81	-581.52	2.77	1357.87	40.33127827	-104.82897677
6543.00	33.56	348.76	5749.71	2699.68	-592.28	1.52	1382.93	40.33141241	-104.82901535
6632.00	35.15	347.97	5823.19	2748.86	-602.41	1.86	1407.51	40.33154743	-104.82905171
6722.00	35.04	349.34	5896.83	2799.59	-612.59	0.88	1432.59	40.33168668	-104.82908822
6811.00	34.46	348.84	5969.95	2849.41	-622.19	0.73	1456.84	40.33182341	-104.82912266
6901.00	34.05	349.37	6044.34	2899.15	-631.77	0.56	1481.05	40.33195996	-104.82915701
6990.00	34.27	348.56	6117.99	2948.20	-641.34	0.57	1505.03	40.33209459	-104.82919133
7079.00	33.62	349.46	6191.82	2996.98	-650.81	0.92	1528.86	40.33222850	-104.82922533
7169.00	34.52	350.34	6266.37	3046.62	-659.65	1.14	1552.33	40.33236475	-104.82925703
7259.00	33.92	350.40	6340.79	3096.52	-668.12	0.67	1575.52	40.33250172	-104.82928740
7348.00	34.65	346.69	6414.33	3145.63	-678.08	2.49	1599.91	40.33263653	-104.82932316
7437.00	34.02	342.87	6487.83	3194.05	-691.24	2.52	1627.13	40.33276944	-104.82937036
7527.00	37.59	330.71	6560.91	3242.13	-712.12	8.83	1661.61	40.33290140	-104.82944526
7617.00	43.86	322.56	6629.13	3290.91	-744.56	9.12	1707.31	40.33303530	-104.82956162
7706.00	50.59	313.59	6689.60	3339.21	-788.31	10.57	1763.64	40.33316787	-104.82971853
7796.00	56.41	300.46	6743.26	3382.34	-846.02	13.37	1831.71	40.33328626	-104.82992552
7885.00	60.46	286.89	6790.00	3412.50	-915.28	13.75	1906.85	40.33336903	-104.83017396
7974.00	63.05	281.20	6832.14	3431.47	-991.30	6.34	1985.05	40.33342109	-104.83044663
8064.00	68.88	282.98	6868.79	3448.70	-1071.62	6.72	2066.82	40.33346839	-104.83073476
8153.00	76.61	283.23	6895.17	3467.96	-1154.34	8.69	2151.48	40.33352125	-104.83103146
8243.00	84.54	280.93	6909.89	3486.51	-1241.09	9.16	2239.77	40.33357214	-104.83134261
8268.24	87.06	277.50	6911.74	3490.54	-1265.93	16.83	2264.66	40.33358320	-104.83143172
8332.00	89.54	274.19	6913.63	3497.02	-1329.32	6.48	2327.03	40.33360100	-104.83165908
8421.00	89.94	270.88	6914.04	3500.96	-1418.22	3.75	2412.94	40.33361179	-104.83197795
8510.00	90.00	271.36	6914.09	3502.70	-1507.20	0.54	2498.26	40.33361655	-104.83229712
8600.00	90.25	268.01	6913.89	3502.20	-1597.19	3.73	2583.86	40.33361517	-104.83261988
8690.00	90.52	268.24	6913.28	3499.26	-1687.14	0.39	2668.69	40.33360707	-104.83294252
8779.00	90.06	267.17	6912.83	3495.70	-1776.06	1.31	2752.34	40.33359727	-104.83326148
8868.00	88.09	264.85	6914.27	3489.50	-1864.82	3.42	2835.05	40.33358026	-104.83357986
8958.00	89.20	270.39	6916.40	3485.77	-1954.69	6.28	2919.55	40.33357000	-104.83390218
9047.00	90.52	271.40	6916.62	3487.16	-2043.67	1.87	3004.77	40.33357379	-104.83422136
9137.00	90.34	269.14	6915.94	3487.59	-2133.66	2.52	3090.65	40.33357493	-104.83454414
9226.00	90.52	265.40	6915.27	3483.35	-2222.54	4.21	3174.06	40.33356328	-104.83486294
9316.00	90.18	266.39	6914.72	3476.90	-2312.31	1.16	3257.65	40.33354557	-104.83518492
9406.00	90.55	268.76	6914.15	3473.10	-2402.22	2.67	3342.18	40.33353510	-104.83550741
9495.00	90.12	266.15	6913.63	3469.15	-2491.12	2.97	3425.70	40.33352423	-104.83582629
9584.00	90.46	265.17	6913.18	3462.41	-2579.86	1.17	3508.22	40.33350572	-104.83614460
9674.00	90.03	269.45	6912.79	3458.19	-2669.74	4.78	3592.59	40.33349410	-104.83646698
9764.00	89.35	274.09	6913.28	3460.97	-2759.67	5.21	3679.13	40.33350170	-104.83678955
9853.00	89.51	272.95	6914.17	3466.43	-2848.50	1.29	3765.43	40.33351667	-104.83710815
9943.00	89.48	272.18	6914.96	3470.46	-2938.41	0.86	3852.32	40.33352770	-104.83743064
10032.00	89.63	272.13	6915.65	3473.80	-3027.34	0.18	3938.09	40.33353685	-104.83774963
10122.00	88.58	271.28	6917.06	3476.48	-3117.29	1.50	4024.61	40.33354417	-104.83807226
10211.00	88.89	272.71	6919.02	3479.58	-3206.21	1.64	4110.29	40.33355264	-104.83839121
10300.00	89.02	272.21	6920.65	3483.40	-3295.11	0.58	4196.16	40.33356309	-104.83871009
10390.00	88.95	270.15	6922.24	3485.25	-3385.07	2.29	4282.45	40.33356815	-104.83903278
10480.00	89.42	269.47	6923.52	3484.95	-3475.06	0.92	4368.11	40.33356729	-104.83935556
10569.00	90.00	270.67	6923.97	3485.06	-3564.06	1.50	4452.95	40.33356756	-104.83967477
10658.00	89.69	270.59	6924.21	3486.04	-3653.05	0.36	4538.06	40.33357021	-104.83999398
10748.00	89.23	271.76	6925.06	3487.89	-3743.03	1.40	4624.36	40.33357524	-104.84031671
10837.00	89.11	272.41	6926.35	3491.12	-3831.96	0.74	4710.08	40.33358409	-104.84063570
10927.00	89.48	269.14	6927.46	3492.34	-3921.93	3.66	4796.19	40.33358739	-104.84095842
11016.00	89.75	266.83	6928.06	3489.21	-4010.87	2.61	4879.99	40.33357876	-104.84127742
11105.00	89.57	267.89	6928.58	3485.11	-4099.77	1.21	4963.46	40.33356747	-104.84159630
11195.00	89.60	265.83	6929.24	3480.18	-4189.63	2.29	5047.60	40.33355390	-104.84191860
11284.00	89.38	263.84	6930.03	3472.17	-4278.26	2.25	5129.63	40.33353186	-104.84223650
11373.00	89.35	268.44	6931.01	3466.18	-4367.03	5.17	5212.40	40.33351538	-104.84255490
11463.00	89.26	274.74	6932.11	3468.68	-4456.94	7.00	5298.84	40.33352219	-104.84287741
11552.00	89.32	274.82	6933.21	3476.09	-4545.63	0.11	5385.60	40.33354250	-104.84319551
11641.00	89.26	272.45	6934.31	3481.74	-4634.44	2.66	5471.94	40.33355794	-104.84351405
11731.00	89.60	270.70	6935.21	3484.21	-4724.39	1.98	5558.41	40.33356468	-104.84383672
11820.00	89.72	268.91	6935.74	3483.91	-4813.39	2.02	5643.12	40.33356380	-104.84415593
11910.00	89.72	268.76	6936.18	3482.08	-4903.37	0.17	5728.31	40.33355873	-104.84447868
11999.00	89.69	269.39	6936.63	3480.64	-4992.35	0.71	5812.67	40.33355474	-104.84479786
12089.00	89.63	267.51	6937.17	3478.21	-5082.32	2.09	5897.66	40.33354801	-104.84512053
12178.00	90.28	268.61	6937.24	3475.19	-5171.26	1.44	5981.51	40.33353969	-104.84543957
12268.00	89.60	271.33	6937.33	3475.15	-5261.25	3.12	6067.25	40.33353950	-104.84576236
12357.00	89.75	275.09	6937.84	3480.13	-5350.10	4.23	6153.42	40.33355313	-104.84608103
12447.00	89.60	275.21	6938.35	3488.21	-5439.73	0.21	6241.29	40.33357525	-104.84640254
12536.00	90.09	274.13	6938.59	3495.45	-5528.43	1.33	6328.01	40.33359509	-104.84672071
12626.00	90.18	271.11	6938.38	3499.57	-5618.33	3.36	6414.92	40.33360632	-104.84704316
12715.00	90.18	267.99	6938.10	3498.87	-5707.32	3.51	6499.51	40.33360435	-104.84736234
12804.00	90.15	265.97	6937.84	3494.18	-5796.19	2.27	6582.77	40.33359142	-104.84768110
12894.00	90.09	266.23	6937.65	3488.06	-5885.98	0.30	6666.48	40.33357456	-104.84800316
12984.00	90.03	268.52	6937.56	3483.94	-5975.88	2.55	6750.90	40.33356319	-104.84832562
13073.00	88.98	272.85	6938.33	3485.00	-6064.85	5.01	6836.00	40.33356605	-104.84864473
13163.00	89.14	273.59	6939.80	3490.05	-6154.69	0.84	6923.15	40.33357986	-104.84896700
13252.00	89.32	269.34	6941.00	3492.33	-6243.63	4.78	7008.60	40.33358604	-104.84928603
13342.00	88.89	267.52	6942.41	3489.86	-6333.58	2.08	7093.57	40.33357921	-104.84960867
13432.00	89.35	268.53	6943.79	3486.76	-6423.52	1.23	7178.33	40.33357064	-104.84993125
13521.00	89.11	269.31	6944.98	3485.08	-6512.49	0.92	7262.61	40.33356597	-104.85025039
13611.00	89.02	269.72	6946.45	3484.32	-6602.48	0.47	7348.12	40.33356381	-104.85057315
13700.00	88.95	269.90	6948.03	3484.03	-6691.47	0.22	7432.83	40.33356294	-104.85089232
13790.00	88.89	270.47	6949.73	3484.32	-6781.45	0.64	7518.67	40.33356367	-104.85121508
13879.00	89.78	270.71	6950.76	3485.23	-6870.44	1.04	7603.74	40.33356611	-104.85153427

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
13969.00	90.09	271.41	6950.86	3486.90	-6960.42	0.85	7690.00	40.33357062	-104.85185703
14058.00	90.03	271.70	6950.77	3489.31	-7049.39	0.33	7775.51	40.33357718	-104.85217615
14147.00	90.00	270.97	6950.75	3491.39	-7138.36	0.82	7860.92	40.33358280	-104.85249529
14237.00	90.65	270.21	6950.23	3492.32	-7228.36	1.11	7946.96	40.33358527	-104.85281808
14327.00	90.52	268.49	6949.32	3491.29	-7318.34	1.92	8032.40	40.33358239	-104.85314085
14416.00	90.46	269.51	6948.55	3489.74	-7407.32	1.15	8116.72	40.33357806	-104.85346001
14506.00	90.49	271.33	6947.81	3490.40	-7497.31	2.02	8202.68	40.33357979	-104.85378280
14595.00	90.31	272.90	6947.19	3493.68	-7586.25	1.78	8288.42	40.33358874	-104.85410180
14685.00	90.28	272.09	6946.72	3497.60	-7676.16	0.90	8375.29	40.33359941	-104.85442430
14774.00	90.37	263.57	6946.22	3494.24	-7765.01	9.57	8458.94	40.33359010	-104.85474300
14864.00	91.26	270.25	6944.94	3489.39	-7854.82	7.49	8543.05	40.33357671	-104.85506513
14953.00	91.23	273.44	6943.00	3492.25	-7943.74	3.58	8628.66	40.33358449	-104.85538408
15043.00	90.52	273.63	6941.63	3497.80	-8033.56	0.82	8715.93	40.33359964	-104.85570625
15132.00	90.68	274.93	6940.70	3504.44	-8122.31	1.47	8802.51	40.33361780	-104.85602457
15222.00	90.77	274.27	6939.56	3511.66	-8212.01	0.74	8890.18	40.33363752	-104.85634633
15312.00	90.71	270.89	6938.39	3515.71	-8301.90	3.76	8977.06	40.33364856	-104.85666875
15401.00	90.77	269.19	6937.24	3515.77	-8390.89	1.91	9061.88	40.33364865	-104.85698794
15490.00	90.09	268.42	6936.58	3513.92	-8479.86	1.15	9146.11	40.33364347	-104.85730709
15580.00	90.09	268.09	6936.44	3511.18	-8569.82	0.37	9231.00	40.33363586	-104.85762975
15670.00	90.18	267.90	6936.22	3508.03	-8659.77	0.23	9315.76	40.33362713	-104.85795237
15759.00	90.12	267.91	6935.99	3504.77	-8748.71	0.07	9399.52	40.33361812	-104.85827138
15849.00	90.06	268.16	6935.85	3501.69	-8838.65	0.29	9484.30	40.33360956	-104.85859400
15938.00	90.00	270.02	6935.80	3500.27	-8927.64	2.09	9568.67	40.33360559	-104.85891318
16028.00	90.25	271.48	6935.61	3501.45	-9017.63	1.65	9654.78	40.33360873	-104.85923596
16117.00	90.15	273.96	6935.29	3505.67	-9106.52	2.79	9740.77	40.33362024	-104.85955481
16207.00	90.55	276.39	6934.75	3513.79	-9196.14	2.74	9828.63	40.33364243	-104.85987629
16297.00	90.28	274.48	6934.09	3522.32	-9285.73	2.14	9916.59	40.33366573	-104.86019764
16386.00	90.77	273.73	6933.28	3528.69	-9374.50	1.01	10003.11	40.33368313	-104.86051605
16476.00	90.74	272.47	6932.09	3533.55	-9464.36	1.40	10090.21	40.33369639	-104.86083836
16566.00	90.74	270.00	6930.93	3535.49	-9554.32	2.74	10176.53	40.33370162	-104.86116106
16656.00	90.58	267.73	6929.89	3533.71	-9644.29	2.53	10261.73	40.33369663	-104.86148377
16745.00	90.62	266.11	6928.96	3528.93	-9733.16	1.82	10344.96	40.33368341	-104.86180250
16835.00	89.82	264.85	6928.61	3521.84	-9822.87	1.66	10428.30	40.33366385	-104.86212429
16924.00	90.03	264.79	6928.73	3513.80	-9911.51	0.25	10510.33	40.33364169	-104.86244221
17014.00	90.03	266.11	6928.68	3506.66	-10001.23	1.47	10593.66	40.33362200	-104.86276399
17103.00	90.00	270.98	6928.66	3504.40	-10090.17	5.47	10677.73	40.33361569	-104.86308302
17192.00	90.06	273.91	6928.61	3508.20	-10179.08	3.29	10763.60	40.33362602	-104.86340193
17282.00	90.06	272.09	6928.52	3512.91	-10268.95	2.02	10850.67	40.33363884	-104.86372430
17371.00	90.09	270.98	6928.40	3515.29	-10357.92	1.25	10936.18	40.33364528	-104.86404341
17461.00	90.34	269.70	6928.07	3515.83	-10447.91	1.45	11022.10	40.33364665	-104.86436622
17550.00	90.00	268.93	6927.80	3514.76	-10536.91	0.95	11106.58	40.33364362	-104.86468542
17640.00	90.12	272.54	6927.71	3515.92	-10626.88	4.01	11192.67	40.33364668	-104.86500816
17729.00	90.12	275.87	6927.52	3522.44	-10715.63	3.74	11279.22	40.33366449	-104.86532649
17819.00	90.31	276.30	6927.18	3531.98	-10805.12	0.52	11367.39	40.33369057	-104.86564750
17906.13	90.25	275.21	6926.76	3540.72	-10891.81	1.25	11452.65	40.33371445	-104.86595846
17908.00	90.18	274.12	6926.75	3540.87	-10893.68	1.25	11454.47	40.33371486	-104.86596514
17918.72	90.18	274.12	6926.72	3541.64	-10904.37	0.02	11464.89	40.33371696	-104.86600349
17953.00	90.18	274.17	6926.61	3544.12	-10938.56	0.14	11498.22	40.33372373	-104.86612613
17998.00	90.18	270.88	6926.47	3546.10	-10983.51	7.31	11541.66	40.33372911	-104.86628737
18087.00	90.22	265.64	6926.16	3543.40	-11072.44	5.89	11625.58	40.33372159	-104.86660633
18112.00	90.15	263.77	6926.08	3541.09	-11097.33	7.49	11648.60	40.33371523	-104.86669561
18125.21	90.15	263.77	6926.05	3539.66	-11110.46	0.00	11660.68	40.33371127	-104.86674271
18136.00	90.15	263.77	6926.02	3538.49	-11121.19	0.00	11670.55	40.33370805	-104.86678119

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
1577.00	1563.73	122.63	-32.20	40.32433862	-104.82700648	9.625" Csg: 1577 / 1564 MD/TVD
8268.24	6911.74	3490.54	-1265.93	40.33358320	-104.83143172	460 Setback: 8268 / 6912 MD/TVD, 78 FNL, 460 FEL Sec 12
17906.13	6926.76	3540.72	-10891.81	40.33371445	-104.86595846	Btm Toe Sub: 17,906 / 6927 MD/TVD, 76 FNL, 473 FWL Sec 11
17918.72	6926.72	3541.64	-10904.37	40.33371696	-104.86600349	460 Setback: 17,919 / 6927 MD/TVD, 76 FNL, 460 FWL Sec 11
18125.21	6926.05	3539.66	-11110.46	40.33371127	-104.86674271	PBTD: 18,125 / 6926 MD/TVD, 84 FNL, 254 FWL Sec 11
18136.00	6926.02	3538.49	-11121.19	40.33370805	-104.86678119	5.5" Csg: 18,136 / 6926 MD/TVD, 85 FNL, 243 FWL Sec 11
18136.00	6926.02	3538.49	-11121.19	40.33370805	-104.86678119	BHL: 18,136 / 6926 MD/TVD, 85 FNL, 243 FWL Sec 11

Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
13.500	0.00	0.00	0.00	0.00	1577.00	1563.73	122.63	-32.20
8.500	1577.00	1563.73	122.63	-32.20	18136.00	6926.02	3538.49	-11121.19

Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Casing	0.00	0.00	0.00	0.00	1577.00	1563.73	122.63	-32.20
5 1/2in Casing	0.00	0.00	0.00	0.00	18136.00	6926.02	3538.49	-11121.19

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
618222	As Drilled - 20190918	18136.00	6926.02	MWD

Coordinates are from Slot
MD's and TVD's are from Rig Floor 4755.0ft above Mean Sea Level
Vertical Section is from Wellhead on azimuth 287.65 degrees
Bottom hole distance is 11670.55 Feet on azimuth 287.65 degrees from Wellhead
Survey calculation uses Minimum Curvature method